

111.7 - Soils, Sediments, and Sludges (powder form)

Technical Contact: liz.mackey@nist.gov

Technical Contact for SRM 2701: stephen.long@nist.gov

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SRM	1646a	1648a	1944	2586	2587	2701	2702	2703	2709a	2710a	2711a	2780	2781	2782
Description				Trace Elements in Soil (contains lead from paint)	Trace Elements in Soil (contains lead from paint)	Hexavalent Chromium in Contaminated Soil (High Level)	Inorganics in Marine Sediment	Sediment for Solid Sampling (Small, Sample) Analytical Techniques				Hard Rock Mine Waste	Domestic Sludge	Industrial Sludge
	Estuarine Sediment	Urban Particulate Matter	New York/New Jersey Waterway Sediment						San Joaquin Soil	Montana I Soil	Montana II Soil			
Unit of Issue	(70 g)	(2 g)	(50 g)	(55 g)	(55 g)	(75 g)	(50 g)	(5 g)	(50 g)	(50 g)	(50 g)	(50 g)	(40 g)	(70 g)

(Concentrations are in mass fractions, in mg/kg, unless noted as %)

Aluminum	2.297 %	3.43 %	5.33%	6.652%	5.86 %	5.05 %	8.41 %	8.33 %	7.37 %	5.95 %	6.72 %	8.87 %	1.6 %	1.37 %
Antimony	(0.3)	45.4	(5)				5.60	5.62	1.55	52.5	23.8 %	(160)		(2.0)
Arsenic	6.23	115.5	18.9	8.7	13.7		45.3	45.5	10.5	0.154%	107	48.8	7.82	166
Barium	(210)			413	568		397.4	416	979	792	730	993		254
Beryllium	(< 1)		1.6	(1.4)	(9.2)		(3.0)							
Boron		161							(74)	(20)	(50)			
Bromine		502	86											
Cadmium	0.148	73.7	8.8	2.71	1.92		0.817	0.811	0.371	12.3	54.1	12.10	12.78	4.17
Calcium	0.519 %	5.84 %	1.0 %	2.218 %	0.927 %	7.47 %	0.343 %	(0.31%)	1.91 %	0.964 %	2.42 %	0.195 %	3.9 %	0.67 %
Carbon (total)		(12.7)					(3.36 %)							(2.1 %)
Carbon (element)		(10.5 %)												
Carbon (organic)		(2.3 %)					(3.27 %)							
Cerium	(34)	54.6	(65)	58	(57)		123.4	125.5	42	(60)	(70)	(64)		1240
Cesium		3.4	3.0				(7.1)	(7.7)	5.0	8.25	6.7	(13)		

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Chlorine		4543	1.4 %											
Chromium	40.9	402	266	301	92	4.26 %	352		130	23	52.3	(44)	202	109
Cobalt	(5)	17.93	14	(35)	(14)		27.76	27.70	12	5.99	9.89	(2.2)		66.3
Copper	10.01	610	380	(81)	(160)		117.7	(120)	33.9	0.342%	140	215.5	627.4	2594
Dysprosium				(5.4)					(3)	(3)	(5)			
Erbium				(3.3)										
Europium			(1.3)	(1.5)					0.83	0.82	1.1			(0.34)
Gadolinium				(5.8)					3.0	3.0	(5)			
Gallium	(5)			(14)	(13)		24.3					(26)		35
Gold			(0.10)							(0.2)		(0.18)		(2.2)
Hafnium		(5.2)					(12.6)	(11.8)	(4)	(7)	9.2	(4.4)		(0.77)

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* Determination made in parent material (SRM 2702)

** These SRMs also have noncertified leach data. The leach data for SRMs 2709, 2710, and 2711 are based on EPA Method 3050; the leach data for SRM 2781 and 2782 are based on EPA Methods 3050 and 3051.

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8704

Buffalo
River
Sediment
(50 g)

6.10 %

3.07

(17)

413

2.94

2.641 %

3.351 %

66.5

5.83

8704

Buffalo
River
Sediment
(50 g)

121.9

13.57

1.31

8.4

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Hexavalent Cr	551.2													
Holmium	(1.1)						(0.84)							
Indium											(7)	(1)	238	
Iron (total)	2.008 %	3.92 %	3.53 %	5.161 %	2.813 %	23.73 %	7.91 %	7.38 %	3.36 %	4.32 %	2.82 %	2.784 %	2.8 %	26.9 %

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Lanthanum	(17)	39	(39)	29.7	(29)		73.5	75.9	21.7	30.6	38	(38)		58.1
Lead	11.7	0.655 %	330	432	3242		132.8	130	17.3	0.552%	0.140 %	0.577 %	202.1	574
Lithium	(18)			(25)	(32)		(78.2)					(18)		(5.0)
Lutetium									(0.3)	0.31	(0.5)			
Magnesium	0.388 %	0.813 %	(1.0 %)	1.707 %	0.669 %	7.47 %	0.990 %	(1.0 %)	1.46 %	0.734 %	1.07 %	0.533 %	0.59 %	0.26 %
Manganese	234.5	790	505	1000	651	0.2137 %	1757	1734	529	0.214 %	675	462		(300)
Mercury	(0.04)		3.4	0.367	0.290		0.4474	0.474	0.9	9.88	7.42	0.710	3.64	1.10
Molybdenum	(1.8)						10.8	(11)*				(11)	46.7	10.07
Neodymium	(15)			26.4	(25)		(56)	(72)	(17)	22	29	(28)		
Nickel	(23)	81.1	76.1	(75)	(36)		75.4	(75)*	85	8	21.7	(12)	80.2	154.1
Niobium				(6)	(14)		(63)	(63)*				(18)		
Nitrogen														4.78 %
Phosphorus	0.027 %			1001	970		0.1552 %	(0.16 %)*	0.0688 %	0.105 %	842	427	2.42 %	0.50 %
Potassium	0.864 %	1.056 %	1.6 %	0.976 %	1.583 %	0.174 %	2.054 %	2.08 %	2.11 %	2.17 %	2.53 %	3.38 %	0.49 %	0.32 %
Praseodymium				(7.3)										

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Rubidium	(38)	51.0	75				127.7	130	(99)	117	120	(175)		(23)
Samarium		4.3		(6.1)			(10.8)	(10.8)	(4)	4	5.93			(1.3)
Scandium	(5)	(6 to 120)	10.2	(24)	(11)		25.9	25.95	11.1	9.9	8.5	(23)		(3.4)

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3.97 %

8704

Buffalo
River
Sediment
(50 g)

150

1.200 %

544

42.9

2.001 %

8704

Buffalo
River
Sediment
(50 g)

11.26

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Selenium	0.193	28.4	1.4	(0.6)			4.95	(4.9)*	(1.5)	(1)	(2)	(5)	16.0	0.44
Silicon	40.0 %	12.8 %	31 %	29.15 %	33.13 %	4.17 %			30.3 %	31.1 %	31.4 %	(31 %)	(5.1 %)	(20.3 %)
Silver	(6.0	6.4				0.622	(0.59)		(40)	(6)	(27)	98	30.6
Sodium	0.741 %	4240	1.9 %	0.468 %	1.127 %	0.255 %	0.681 %	0.693 %	1.22 %	0.894 %	1.20 %	0.221 %	0.21 %	1.30 %
Strontium	(68)	215		84.1	126		119.7	118	239	255	242	217		
Sulfur	0.352 %	5.51 %					(1.5 %)					1.263 %		(0.2 %)
Tantalum									(0.7)	(0.9)	(1)			(0.73)
Tellurium												(5)		
Terbium				(0.9)					(0.5)	(0.5)	(0.8)	(0.58)		(0.48)
Thallium	(< 0.5)		0.59				0.8267	(0.83)*	0.58	1.52	(3)	(5)		
Thorium	(5.8)	(7 to 107)	(13)	(7)	(7.5)		20.51	20.22	10.9	18.1	15	(12)		(2.4)
Thulium			42	(0.5)			31.6	(32)*				(0.4)		

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Titanium	0.456 %	4021	4300	0.605 %	3920	0.547 %	0.884 %	0.880 %	0.336 %	0.311 %	0.317 %	0.699 %	0.32 %	880
Tungsten		4.6					(6.2)	(6.4)		(190)		(24)		
Uranium	(2.0)		(3.1)				(10.4)		3.15	9.11	3.01	(4)		8.3
Vanadium	44.84	127	100	(160)	(78)	0.236 %	357.6	360	110	82	80.7	268		80
Zirconium									195	(200)		(176)		
Ytterbium				2.64	(1.6)				(2)	(2)	(3)			(0.74)
Yttrium				(21)	(15)									(10)
Zinc	48.9	4800	656	352	335.8		485.3	480	103	0.418%	414	0.257 %	1273	1254

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0.553 %
9.07
8704
Buffalo River Sediment (50 g)
0.457 %
3.09
94.6
408

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